

We claim:

1.           A mesh screen apparatus used in subterranean wells, comprising:  
  
a mesh medium having interlocking layers of mesh material; and  
  
a base pipe having openings in its sidewall, and onto which the mesh medium is mounted such that the mesh medium covers the openings.
2.           The mesh screen apparatus of claim 1 in which the mesh material comprises fiber strands.
3.           The mesh screen apparatus of claim 2 in which the fiber strands are arranged in orthogonal layers.
4.           The mesh screen apparatus of claim 2 in which the fiber strands are metallic.
5.           The mesh screen apparatus of claim 1 in which the mesh medium is a tubular.
6.           The mesh screen apparatus of claim 5 in which the tubular is seamless.
7.           The mesh screen apparatus of claim 1 in which the mesh medium has a porosity.
8.           The mesh screen apparatus of claim 7 in which the mesh material comprises fiber strands and the porosity is determined by the thickness of the fiber strands.
9.           The mesh screen apparatus of claim 7 in which the mesh material comprises fiber strands of variable diameter and the porosity is variable across the mesh medium.

10. The mesh screen apparatus of claim 7 in which the mesh material comprises fiber strands and the porosity is determined by the diameter and number of openings in the mesh medium.

11. The mesh screen apparatus of claim 1 in which the mesh medium has variable thickness.

12. The mesh screen apparatus of claim 1 in which the mesh medium has a standard mesh incorporated as one of the layers.

13. The mesh screen apparatus of claim 1 in which the mesh medium covers only a portion of the base pipe.

14. A method to make a mesh screen apparatus used in subterranean wells, comprising:

providing layers of intermeshing fibers;

stacking the layers;

interlocking the layers; and

placing the interlocked layers onto a base pipe having openings therethrough.

15. The method of claim 14 further comprising forming the interlocked layers into a tubular.

16. The method of claim 15 further comprising sliding the tubular onto the base pipe.

17. The method of claim 14 further comprising using needles having prongs to interlock the layers.

18. The method of claim 14 further comprising incorporating a standard mesh as one of the layers.

19. The method of claim 14 further comprising using needles to produce openings through the interlocked layers.

20. The method of claim 14 further comprising attaching a structure to the base pipe and securing the interlocking layers to only a portion of the base pipe.

21. A mesh screen apparatus used in subterranean wells, comprising:

a mesh medium having interlocking layers of mesh material; and

a piece of equipment which the mesh medium at least partially encloses such that the mesh medium prevents infiltration of particulates into the equipment.